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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/935,199	08/22/2001	Tejas B. Desai	2000P07837US01	8756

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EXAMINER

LEE, BENJAMIN C

ART UNIT PAPER NUMBER

2632

DATE MAILED: 03/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/935,199	<b>Applicant(s)</b> DESAI ET AL.	
	<b>Examiner</b> Benjamin C. Lee	<b>Art Unit</b> 2632	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2004.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413) .<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)               |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>5/12/03</u> . | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

**Claim Status**

1. Claims 1- 15 are pending.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 2-3 and 6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

1) In claims 2, 3 & 6, “the sensor signal” lacks antecedent basis.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

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5. Claims 1-4 and 9-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Ghabra et al. (US pat. #6,420,967).

1) Regarding claims 1-4 and 9-12, Ghabra et al. discloses:

a) Claim 1: the claimed remote signaling receiver system (Figs. 1-2) comprising: a first transmitter device (22 or 26) that generates at least a first wireless communication signal (24 or 28); a second transmitter device (16) that generates at least a second wireless communication signal (18); and a receiver (34) that receives the first and second signals, the receiver including a first demodulator ("RSSI", "50" and "52" of Fig. 2 and col. 6, lines 48-50) for processing the first signal and a second demodulator ("FSK" of Fig. 2 and col. 6, lines 44-48) for processing the second signal.

b) Claim 2: the claimed wherein the second (transmitter) device and the receiver are supported on a vehicle (tire transmitter 16 mounted on tire of vehicle; receiver 34 mounted on vehicle) and the sensor device signal (tire condition parameter signal 18) provides information regarding a condition of a selected vehicle component.

c) Claim 3: the claimed wherein the sensor device includes a tire condition sensor (12) and the sensor signal (18) provides information regarding at least one condition of at least one of the vehicle tires selected from the group of tire pressure, tire temperature, tire thickness and acceleration (col. 4, lines 37-42).

d) Claim 4: the claimed wherein the first transmitter device is a portable keyless entry signaling device (22), the first demodulator is an ASK demodulator (col. 6, lines 37-38 and 48-50) and the second demodulator is a demodulator that is not affected by amplitude modulation on

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the second signal (inherent of FSK of col. 6, lines 35-37-44-47: Frequency Shift Keying is not affected by Amplitude Shift Keying modulations).

e) Claims 9, 11-12: the claimed vehicle remote keyless entry system (20, 44 of Fig. 1) comprising: a portable transmitter (22) that generates a wireless communication signal (24); at least one sensor device (12) supported relative to a component (tire 14) on the vehicle that senses a condition of the component and generates a wireless communication signal (18); and a receiver (34) supported on the vehicle that receives the transmitter signal (24) and the sensor signal (18), the receiver including a first ASK demodulator ("RSSI", "50" and "52" of Fig. 2 and col. 6, lines 48-50) for processing the transmitter signal and a second FSK demodulator that is not sensitive to amplitude modulation ("FSK" of Fig. 2 and col. 6, lines 44-48) for processing the sensor signal.

f) Claim 10: the claimed wherein the sensor device includes a tire condition sensor and the sensor signal provides information regarding a condition of at least one of the vehicle tires (col. 4, lines 37-42).

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 7-8 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ghabra et al.

1) Regarding claims 7-8: Ghabra et al. met all of the claimed subject matter as in the consideration of claim 1, except: specifying the claimed steps of:

(B) determining whether the demodulated signal can be interpreted as a signal from the first source or the second source;

(C) demodulating the received signal using the first demodulator when the received signal is from the first source; and

(D) demodulating the received signal using the second demodulator when the received signal is from the second source.

Ghabra et al. discloses that the receiver 34 receives the first (24) and second (18) signals from the respective first (22) and second (16) sources as inputs for processing by the ASK demodulator and FSK demodulator to provide respective ASK and FSK outputs depending on the received input (Figs. 1-2). It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to include the steps of determining whether the demodulated signal can be interpreted as a signal from the first source or the second source; demodulating the received signal using the first demodulator when the received signal is from the first source; and demodulating the received signal using the second demodulator when the received signal is from the second source in a receiver such as taught by Ghabra et al. in order to determine which demodulation to use based on the input signal in performing and providing such intended multiple-demodulation function of the receiver.

2) Regarding claim 15: Ghabra et al. met all of the claimed subject matter as in claim 9, except: the claimed wherein the receiver includes a microprocessor that is programmed to receive the transmitter signal on a first channel and the sensor signal on an image channel.

Ghabra et al. Discloses using a microprocessor with the receiver and programmed to control the operation of the receiver and its multiple-input, multiple-output demodulation function/operations (Figs. 1-2 and col. 6, line 25 and col. 8, line 54). It would have been obvious to one of ordinary skill in the art at the time of the claimed invention that the multiple-input and multiple demodulation operations of the microprocessor for separately demodulating/processing the transmitter signal and the sensor signal in a system such as taught by Ghabra et al. can be implemented by a multiple channel processing architecture such that the receiver includes a microprocessor that is programmed to receive the transmitter signal on a first channel and the sensor signal on an image channel.

8. Claims 5 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ghabra et al. in view of Schuermann (US pat. #5,451,958).

1) Regarding claim 5, Ghabra et al. met all of the claimed subject matter as in claim 1, except: specifying the claimed wherein the receiver is programmed to process all received signals using one of the demodulators and only when a received signal output is not discernable from the one demodulator to process the received signal using the other demodulator.

Ghabra et al. discloses that the receiver 34 receives the at least 2 signals as inputs for processing by the FSK demodulator and ASK demodulator without specifying any particular order or conditional sequence, while Schuermann teaches in the same art of a common RF receiver for demodulating both FSK signals and ASK signals (dual standard RF communication

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system) in which the receiver is programmed to process all received signals using one of the demodulators and only when a received signal output is not discernable from the one demodulator to process the received signal using the other demodulator (Fig. 2a and col. 4, lines 43-60 whereby if FSK signal is missing, then a switch is made to processing using ASK).

In view of the teachings by Ghabra et al. and Schuermann, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to implement the multiple-demodulation receiver function of Ghabra et al. using a known method taught by Schuermann in order to generate the output of the multiple-demodulation receiver based on an input signal that can be any of first and second signal types.

2) Regarding claim 13, Ghabra et al. met all of the claimed subject matter as in claim 9, plus the obviousness consideration of claim 5 in view of Schuermann.

9. Claims 6 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ghabra et al., and further in view of Shuey et al. (US pat. #5,874,904).

1) Regarding claim 6, Ghabra et al. met all of the claimed subject matter as in claim 1, except: specifying the claimed wherein the transmitter signal has a first baud rate and the sensor signal has a second baud rate that is at least two times higher than the first baud rate.

Ghabra et al. teaches using ASK modulation in first transmitter signal for transmitting a simple actuation command signal, and FSK modulation in the second (sensor) transmitter signal for transmitting tire parameter data signal without specifying the respective baud rates. Shuey et al. teaches that the relatively more robust FSK supports at least two times higher baud rate than ASK (col. 2, lines 19-30). In view of the teachings by Ghabra et al. and Shuey et al., it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to use

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first and second baud rates for the transmitter and sensor signals, respectively, which correspond with less data and more data, respectively, so that the second baud rate is at least two times higher than the first baud rate in a system such as taught by Ghabra et al. whereby said first baud rate and higher second baud rate are supported by ASK and FSK of Ghabra et al. as indicated by Shuey et al., so that the more data-intensive sensor signals operate at the higher baud rate allowing for proper communication as intended.

2) Regarding claim 14, Ghabra et al. met all of the claimed subject matter as in claim 9, plus the obviousness consideration of claim 6 in view of Shuey et al.

### ***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

1) Desai et al., US 2002/0149477

--A similar ASK and FSK single receiver for tire pressure and keyless entry transmitted signals (Abstract).

2) Schuermann, US pat. #5,287,112

--Another teaching of FSK used for higher baud rate than ASK (col. 2, lines 29-33 and 50-55).

3) Abbey, US pat. #5,430,770

--A similar FSK and ASK integrated receiver.

4) Schuermann, US pat. #5,552,789

--A similar vehicle communication system.


5) Ghabra et al., US pat. #6,650,236

--A similar vehicle multiple-demodulation receiver.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin C. Lee whose telephone number is (571) 272-2963. The examiner can normally be reached on Mon -Fri 11:00Am-7:30Pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Wu can be reached on (571) 272-2964. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Benjamin C. Lee  
Primary Examiner  
Art Unit 2632

B.L.